

CLAIMS

What is claimed is:

1 1. A device, comprising:

2 a pressure vessel having a first end and an opposing second end;  
3 a sealable port in each of the opposing ends of the pressure vessel;  
4 a vessel rail contained entirely within the pressure vessel, the vessel  
5 rail having a first end adjacent the first end of the pressure  
6 vessel and an opposing second end adjacent the second end  
7 of the pressure vessel;  
8 a movable rail disposed adjacent each of the opposing ends of the  
9 pressure vessel, each movable rail having a first end and an  
10 opposing second end, the first end of each movable rail  
11 being movable between a first position in which the first end  
12 of the movable rail is within the pressure vessel and  
13 contiguous with the first end of the vessel rail, and a second  
14 position in which the first end of the movable rail is outside  
15 the pressure vessel such that the sealable ports can be  
16 sealed.

1 2. The device of claim 1, wherein the vessel rail has an upper surface  
2 with a length extending from the first end of the vessel rail to the  
3 second end of the vessel rail and the vessel rail is movable  
4 perpendicular to the length between a first position and a second  
5 position, the first and second ends of the vessel rail in the first  
6 position being contiguous with the first ends of the movable rails in  
7 their first positions.

1    3.    The device of claim 2, further comprising a heating element located  
2    within the pressure vessel between the first and second ends of the  
3    vessel rail such that the upper surface of the vessel rail is above the  
4    heating element when the vessel rail is in the first position and  
5    below the heating element when the vessel rail is in the second  
6    position.

1    4.    The device of claim 1, wherein the second ends of each of the  
2    movable rails is outside the pressure vessel and the device further  
3    comprises a loading rail with a hinged connection to the second  
4    ends of each of the movable rails such that each movable rail can  
5    fold at approximately a right angle to the connected loading rail to  
6    move to the second position.

1    5.    The device of claim 1, wherein the movable rail moves from the  
2    first position to the second position by moving away from the  
3    vessel rail in a direction of the length of the movable rail.

1    6.    A device, comprising:  
2    a vessel means for providing a pressure-tight chamber;  
3    port means for allowing workpieces to move into and out of the  
4    vessel means;  
5    a first rail means for supporting the workpieces being moved into  
6    the pressure vessel, the first rail means being contained  
7    entirely within the vessel means;

8 a second rail means for supporting the workpieces being moved  
9 into the pressure vessel, the second rail means being  
10 movable between a first position in which the first and  
11 second rail means provide a substantially smooth and  
12 straight upper surface and a second position in which the  
13 port means can be sealed.

1 7. The device of claim 6, wherein the first rail means is further for  
2 raising and lowering the workpieces within the vessel means.

1 8. The device of claim 7, further comprising a heating means for  
2 heating the workpieces.

1 9. The device of claim 6, further comprising a third rail means for  
2 supporting the workpieces being moved into the pressure vessel,  
3 the third rail means being located entirely outside the vessel  
4 means.

1 10. A pressure-tight furnace, comprising:  
2 a pressure vessel having a first end and an opposing second end;  
3 a sealable port in each of the opposing ends of the pressure vessel;  
4 a heating element located within the pressure vessel;  
5 a pair of parallel vessel rails contained entirely within the pressure  
6 vessel, each vessel rail having a first end adjacent the first  
7 end of the pressure vessel and an opposing second end  
8 adjacent the second end of the pressure vessel;

9       two pairs of movable rails disposed adjacent each of the opposing  
10      ends of the pressure vessel, each movable rail having a first  
11      end and an opposing second end, the first end of each  
12      movable rail being movable between a first position in which  
13      the first end of the movable rail is within the pressure vessel  
14      and contiguous with an adjacent end of the vessel rail, and a  
15      second position in which the first end of the movable rail is  
16      outside the pressure vessel such that the sealable ports can  
17      be sealed.

1       11. The furnace of claim 10, wherein the pair of vessel rails each have  
2       an upper surface with a length extending from the first end of the  
3       vessel rails to the second end of the vessel rails and the vessel rails  
4       are movable perpendicular to the lengths between a first position  
5       and a second position, the first and second ends of the vessel rails  
6       in the first position being contiguous with the first ends of the  
7       movable rails in their first positions.

1       12. The furnace of claim 11, wherein the heating element is located  
2       within the pressure vessel between the vessel rails such that the  
3       upper surfaces of the vessel rails are above the heating element  
4       when the vessel rails are in the first position and below the heating  
5       element when the vessel rail are in the second position.

1       13. The furnace of claim 10, wherein the second ends of each of the  
2       movable rails is outside the pressure vessel and the furnace further  
3       comprises two pairs of loading rails, each loading rail having a

4 hinged connection to the second end of the adjacent movable rail  
5 such that each movable rail can fold at approximately a right angle  
6 to the connected loading rail to move to the second position.

1 14. The furnace of claim 10, wherein each of the movable rails moves  
2 from the first position to the second position by moving away from  
3 the vessel rails in a direction of the length of the movable rail.

2025 RELEASE UNDER E.O. 14176